Written on APRIL 14, 2015 AT 6:15 AM *by* SVANDERWERFF

Navy Medicine Researcher Studies Mild Traumatic Brain Injury

Filed under MILITARY MEDICINE, OPERATIONS, READINESS [NO COMMENTS]

By Lt. Jacob Norris

Banner3-284×138 Dr. Usmah Kawoos and Lt. Norris review how the neurotrauma department applies telemetry in monitoring the physiological response to blast-induced traumatic brain injury. The system allows researchers a way to improve our basic understanding of the how blast waves impact the human body. Use of this sensor system for prospective data collection directly informs observational human studies

Editors Note: Lt. Jacob Norris, research psychologist, is leading a study on mild traumatic brain injury at the Naval Medical Research Center (NMRC). NMRC is focused on understanding traumatic brain injury on all levels and time points; from the basic physiology to the potential impact traumatic brain injury (TBI) may have on service member quality of life or the family environment.

My interest in this field of research began during my deployments to Afghanistan as part of the Joint Combat Casualty Research Team. I was able to see the profound impact that good medical research can have on patient care. During the time I spent there, I was able to see how clinicians tasked with mild TBI (mTBI) care wanted to know more about how they could improve what they were doing. These experiences really left an impression on me.

Evidence indicates that blast causes measurable changes to the brain's physiology which may alter how the brain inhibits fear and anxiety. For example, when a warfighter is on patrol and sees something that suggests an imminent improvised explosive device (IED) event, the blast goes off, and the person may be concussed as result. They may also have a stress and anxiety response. The next time the warfighter goes out on patrol and sees the same thing there is an

Navy Medicine Video

Navy Medicine is a global healthcare network of 63,000 Navy medical personnel around the world who provide high quality health care to more than one million eligible beneficiaries. Navy Medicine personnel deploy with Sailors and Marines worldwide, providing critical mission support aboard ship, in the air, under the sea and on the battlefield.

Navy Medicine Social Media

Follow us on Twitter

Join us on Facebook

Read our publications

View our photo stream

Watch our videos

Navy Medicine Live Archives

May 2015 (2)

April 2015 (20)

March 2015 (21)

February 2015 (16)

appropriate stress and anxiety response, then training kicks in and appropriate action is taken. But, when the warfighter returns home and sees something that reminds him of the IED blast he may feel persistent fear and anxiety that is no longer needed. The evidence suggests that the brain's ability to adjust to new scenarios is impaired as a result of blast.

Today, I am part of a research team from the Neurotrauma Department at NMRC studying concussions sustained during combat resulting in a diagnosis of mild traumatic brain injury (mTBI). We are evaluating clinical data from nearly 1,200 warfighters from the Concussion Restoration Care Center, a Navy-Marine Corps initiative that provided care in Afghanistan to injured service members.

These are people who received an intense evaluation and diagnosis of mTBI in a day to a week following a concussion. So I am seeing what the injury looked like closer to the time of injury opposed to months or years later. This research will help us understand what the injury looks like early on, so this is an important patient population to study. Furthermore, understanding this patient population informs our laboratory and experiment-based efforts.

As part of this effort, I am characterizing mTBI concussion by starting with the patient data-sets from the center and looking at blast injuries, mainly from improvised explosive devices. I hope to be able to provide insight to clinicians as to what are the red flags that occur in the hours to days following injury that may indicate whether or not a service member may later develop persistent mTBI.

I am evaluating specific health information and treatment records from a variety of test results used by providers at the center to diagnose mTBI. These tests include a post-concussive symptom checklist, the Automated Neuropsychological Assessment Metric (ANAM), screening for acute stress reaction and post-traumatic stress, as well as balance tests like the Balance Error Scoring System or the Sensory Organizational Test.

I have great collaborators throughout Navy Medicine at Naval Medical Center in Portsmouth and Naval Health Research Center, and other Medical Service Corps scientists who are experts in these fields. We get great support from the Navy-Marine Corps Public Health Center; they are a valuable source of data for researchers like me.

I hope to expand this research to include looking at neuroendocrine dysfunction and cardiovascular health problems preceding the injury that may have an impact on the outcome of the injury, or if these conditions develop after the injury.

This work has the potential to help improve assessment, treatment, care, and rehabilitation following mTBI for DoD personnel. Research into neurotrauma is vitally important for the long-term improvement of health care for the active duty population.

← Next post Previous post →